

Curriculum Vitae/2014



Surname: **BALAN**

First name: **CORNELIU**

Nationality: Romanian

Date of birth: 19 April 1956

Languages: English (speaking - fluent; reading/writing - very well)

Title: Dr.-Ing.

Adress:

“Politehnica” University, Hydraulics Dept., REOROM Laboratory
Splaiul Independentei 313, 060042 BUCHAREST, Romania

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Positions: Professor (Ph.D. adviser), “Politehnica” University Bucharest (PUB), Hydraulics Department;
Head of the REOROM Group of Rheology (PUB), 2000 –
Deputy director Department of Bioengineering and Biotechnology (PUB), 2003-2012
Director Hydraulics Department, 2012 –
Member CSUD – Doctoral Council PUB, 2012 –
Member CNATDCU (Mechanics Section), 2010 –

Hirsch index: 9

Journals ISI: 32 papers

Books: 5

Number Citations: > 250

Areas of scientific interest: continuum mechanics, fluid mechanics, non-Newtonian fluid mechanics, rheology, rheometry, constitutive relations, viscoelastic fluids, yield stress fluids, biofluid dynamics

Collateral areas of study: philosophy of science, social impact of science, literature

Education:

1975 Baccalaureat

1981 Master in mechanical engineering, “Politehnica” University of Bucharest

1991 Doctor Inginer in continuum mechanics, Technische Hochschule Darmstadt, Germany

Principal adviser: Professor K. Hutter; Co-advisers: Professor P. Haupt, Dr. H.M.Laun (BASF)

Fellowships:

10.1990 - 01.1991 DAAD (Deutscher Akademischer Austauschdienst), T.H.Darmstadt
(Prof. K. Hutter), Germany

03.1993 - 06.1993 COST - European Community Research Program,
University of Wales - Aberystwyth (Prof. K. Walters FRS), U.K.

09.1994 - 06.1995 Fulbright Senior Researcher,
University of Minnesota (Prof. R. Fosdick), USA

07.98 - 09.1998 EC - TEMPUS mobility fellowship,
University of Wales - Aberystwyth (Prof. K. Walters FRS), U.K.

03. 2004 DAAD student mobility (visit with 12 students at German technical universities:
Dresden, Berlin, Göttingen, Aachen, Karlsruhe, Darmstadt)

Post graduated courses:

1984 Introduction in boundary element method; University of Bucharest, Professor M. Sburian

1990 Continuum mechanics; T.H.Darmstadt, Germany, Professor K. Hutter

1991 CISM - Mechanics of non-Newtonian fluids, Udine - Italy, Professor K. Walters FRS (co-ordinator)

1993 Rheology course, University of Strathclyde, U.K., Professor K. Walters FRS (co-ordinator)

1995 Dynamics of non-Newtonian fluids, University of Minnesota, USA, Professor D.D.Joseph

1995 Continuum mechanics, University of Minnesota, USA, Professor R. Fosdick

2010 Philosophy of science (master course, Professor M. Flonta), Univ. Bucharest

Visiting scientist (for periods less than 3 months, else is mentioned); the places where I gave seminars are marked*:

01.91- 11.91 T.H.Darmstadt*, Institute für Mechanik, Prof. K. Hutter

1991 BASF, Laboratory of Rheology, Dr.H.M.Laun

1993 Cavendish Laboratory, Cambridge University, Prof. M.R. Mackley

1993 Laboratory of Rheology*, University of Grenoble, Prof. J.M.Piau
 1993 Institut für Strömungslehre und Strömungsmaschinen*, Univ. of Karlsruhe, Prof. K.O.Felsch
 1994 Harvard University*, Applied Sciences Division, Prof. G. McKinley
 1994 M.I.T., Chemical Engineering, Prof. R.C. Armstrong
 1995 Ecole Polytechnique de Montreal*, CRASP, Prof. P. Carreau
 1995 McGill University, Montreal, Prof. J.M.Dealy
 1994/95 University of Minnesota, Chemical Engineering*, Prof.Ch. Macosko
 1994/95 University of Minnesota, History of Science & Technology*, Prof.R. Stuewer
 1996 Delft University*, Prof. A. Gotsis
 1996 Universität der Bundeswehr Hamburg*, Prof. G. Böhme
 1996 Fachhochschule Hamburg*, Prof. E. Kuhn
 1996 AB Nynas - Stockholm, Sweden
 1998 Stuttgart Universität*, Prof. M. Wagner
 1998 T. U. Darmstadt*, Prof. K. Hutter
 1998 Universite de Poitiers*, Prof. D. Bonneau
 04 - 06. 1998 *visiting professor* T.U.Darmstadt*, Prof. K. Hutter
 1998 Leeds University* - IRC, Prof. T.C.B. McLeish
 05 - 06. 1999 *visiting professor* T.U.Darmstadt*, Prof. R. Riedel
 1999 *visiting professor* T.U.Eindhoven*, Prof. Van de Ven
 2000 Stuttgart Universität*, Prof. M. Wagner
 2000 Royal Agriculture University of Copenhagen*, Prof. K. Qvist
 04. - 08. 2000 *visiting professor* T.U.Darmstadt*, Prof. R. Riedel
 04. - 08. 2001 *visiting professor* T.U.Darmstadt*, Prof. R. Riedel
 2001 ETH – Zurich*, Prof. H. Cr. Ottinger
 05. - 06. 2001 Texas A&M University*, Prof. K.R. Rajagopal
 2001 Univ. Catholique Louvain la Neuve*, Prof. R. Keunings
2002 – 2014 *visiting professor* T.U.Darmstadt*, Prof. R. Riedel
 2004/2005 *visiting professor* Univ. Claude Bernard, Lyon 1, Prof. Ph. Miele
 2007 *visiting professor* N.U. Singapore*, Prof. T. Wohland
 2011 *visiting professor* Univ. Montpellier*, Prof. Ph. Miele
 2011 Univ. Petroleum Beijing*, China, Prof. Jinjun Zhang
 2014 University of Lille*, France, Dir. Research CNRS Vincent Senez
 2014 VKI (von Kármán Institute)*, Belgium, Prof. Herman Deconinck

Scientific activity:

Colloquiums (papers included in program; selection):

1980 - 1996 Annual Colloquium of Fluid Mechanics, Romanian Academy
 1985, 1990 National Conf. in Hydrodynamics and Hydraulic Machinery's, Timisoara
 1990 Tribotechnica '90 - Cluj Napoca
 1990, 1992, 1998, 2000, 2004 Int. Colloq. Tribology – T.A.Esslingen, Germany
 1996 EUROMECH - Dynamics of Complex Fluids, Cambridge University
 1996 Drilling Mud Rheology, Schlumberger Cambridge Research Center
 2000 ESAFORM, Stuttgart University
 2000 Int. Workshop "Ultrahigh Temperature Ceramic", Boulder Univ., USA
 2000 Annual Meeting of ELGI – European Lubricating Greases Institute, Athena, Greece
 2000 XIIIth Int. Congress on Rheology, Cambridge, UK
 2001 Methods of Applied Mathematics and Mechanics, Seeheim – Jugenheim, Germany
 2002 Eurorheo 2002-01, Torremolinos, Spain
 2002 6th European Conference on Rheology, Erlangen, Germany
 2003 European Meeting in Hemorheology, Sofia, Bulgaria
 2003 1st Annual Conference of ESR, Guimaraes, Portugal
 2003 Materials Week, München, Germany
 2003 International Conference – CIEM, Bucharest, Romania
 2004 STAMM Conference, Seeheim – Jugenheim, Germany
 2004 EUROMECH – Hydrodynamics of Biofluids, Aachen Germany
 2004 International Conference Fluid Mechanics, Timisoara, Romania
 2005 Symposium MPF, Sesimbra, Portugal
 2005 2nd Annual Conference of ESR, Grenoble, France
 2006 IWMCOF 2006, Prato, Italy
 2007 FIT'2007, Biarritz, France
 2008 Meeting BSR, Liverpool, UK
 2008 ICR, Monterey, USA
 2009 AERC, Cardiff, UK
 2010 AERC, Goteborg, Sweden
 2011 Annual meeting German Soc. Rheology, Berlin (invited lecture)
 2011 Annual meeting BSR, Portmeirion, Wales, UK

2011 Complex motions in fluids, DTU, Kronegrup, Denmark
2011 Int. Conf. on High-Performance Ceramics (CICC-7), Xiamen, China (invited lecture)
2012 International Congress of Rheology, Lisbon, Portugal
2013 AERC, Leuven, Belgium
2013 European Congress Ceramics, Limoges, France (invited lecture)
2014 AERC, Karlsruhe, Germany,
2014 Annual meeting BSR, Lake Vyrnmy, Wales, UK (invited lecture)
2014 ISNT Int. Meeting, Wildbath Kreuz, Germany (invited lecture)

Colloquiums (Chairman)

2000, 2004 International Colloquium in Tribology - T.A.Esslingen, Germany;
Section: Lubricating greases
2000 XIIIth Int. Congress on Rheology, Cambridge, UK; Section: Rheometry
2002 6th European Conference on Rheology, Erlangen; Section: Non-Newtonian fluid mechanics
2009 Annual Conference of the ESR, Cardiff, UK; Section: Viscoplasticity and solid rheology
2009 CFM 2009, Bran, Romania (organizer and chairman) – UEFISCDI workshop
2010 SSR 2010, Cluj Napoca (organizer and chairman)
2011 SSR 2011, Bucharest-Iasi (organizer and chairman)
2012 SSR 2012, Sinaia (organizer and chairman) – UEFISCDI workshop
2012 International Congress of Rheology, Lisbon, Portugal (co-organizer, chairman section)

Member in Ph.D. commission:

1997 Alexandru Radulescu (UPB, Univ. Poitiers – Prof. M. Pascovici, Prof. D. Bonneau)
1998 Daniela Nistoran (UPB – Prof. D. Ionescu)
2000 Virgil Optasanu (Univ. Poitiers, UPB – Acad. V. N. Constantinescu, Prof. D. Bonneau)
2005 Sylvain Dupperrier (Univ. Claude Bernard Lyon 1, Prof. Ph. Miele)
2006 Corina Giurgea (U. T. Cluj Napoca, Prof. L. Deacu)
2008 Andreea Calin (P.U.Bucharest, Prof. C. Balan)
2008 Sebastian Faur (P.U. Bucharest, Prof. Al. Morega)
2009 Catalin Marculescu (P.U.Bucharest, Prof. C. Balan)
2009 Khalid Zarbane (Univ. Poitiers, Prof. M. Hajjam)
2009 Laura Gottardo (Univ. Claude Bernard Lyon 1, Prof. Ph. Miele)
2010 Ting Ouyang (P.U.Bucharest, Prof. C. Balan)
2010 Roland Kadar (P.U. Bucharest, Prof. C. Balan)
2011 Catalin Mihai Balan (P.U. Bucharest, Prof. C. Balan)
2011 Marin Petre (P.U. Bucharest, Prof. Al. Morega)
2011 Cristina Verona Popescu (UTCB, Prof. I. Colda)
2011 Richardo Chavez (TU Darmstadt, Prof. R. Riedel)
2012 Constantin Tanasa (PU Timisoara, Prof. R. Susan-Resiga)
2012 Daniela Coblas (P.U. Bucharest, Prof. C. Balan)
2012 Tunde Borbath (P.U. Bucharest, Prof. V. Panaitescu)
2012 Talida Mirona Carlioru (P.U. Bucharest, Prof. V. Panaitescu)
2013 Nicoleta Tanase (P.U. Bucharest, Prof. E.C. Isbasoiu, Prof. C. Balan)
2014 Tiberiu Ciocan (PU Timisoara, Prof. R. Susan-Resiga)

Partner in EU projects:

SOCRATES (T.U. Darmstadt, University Lyon I)
"PolyCerNet" EU project – (MRTN-CT-2005-019601): 2006-2009

Research projects - coordinator (since 2000):

Rheology of drilling fluids in presence of polymer solutions, nr. 18, UPB-CCEPM, (S.C. PETROM S.A.) 2003
Rheology of drilling fluids with micro-bubbles, nr. 40A, UPB-CCEPM (S. C. PETROM S.A.) 2002
"PolyCerNet" EU project – (MRTN-CT-2005-019601); 2006-2008 (educational project; partners: Univ.Lyon, Univ. Paris, T.U. Darmstadt, Univ. Trento, Univ. Padova, Acad. Bratislava, UPB)
Project CEEEX (VIASAN nr: 89/2006) - DIAPROGENDO
(blood modeling in tumoral tissues; 2006-2008; general coordinator: Fundeni Hospital, partners: Univ. Cluj-Napoca, International Institute of Biodynamics, UPB).
Project CEEEX (AMTRANS nr. X2C09/18.07.2006) – RESPLATEPE
(Modeling of the rheological behaviour of solder pastes and conductive adhesives; 2006-2008; general coordinator: UPB – Faculty of Electronics, UPB)
Project CEEEX (AMCSIT nr. 19/2006) - NANOINT
(modeling of hydrodynamics in micro and nano channels; 2006-2008; general coordinator: International Institute of Biodynamics, partners: Univ. Bucharest, Inst. "P. Poni" Iasi, UPB; 30.000 RON).
Project PNC-II ENDONERD (2009-2011; general coordinator: Fundeni Clinic)
Project PNC-II DTI (2009-2011; general coordinator: "Carol Davila" University of Medicine)

Grants (coordinator)

Dynamics of viscoelastic fluids with internal network structure, nr. 5076 - B8, ANSTI, 1999 – 2001

Applications of fluids rheology in biology and medicine, nr. 184, CNCSIS, 2001 – 2002

National Centre for Complex Fluids, BCUM, CNCSIS (World Bank), project 1999 – 2002
(partner; general coordinator U.P. Timisoara)

Rheological investigations of nano- and microfluids in electric and magnetic fields, nr. 113, CNCSIS, 2003 – 2005

Study of proper boundary conditions for complex fluids through micro and nano-channels, CNCSIS, 2007-2009

Rheometry of complex fluids in the presence of patterned surfaces, UEFISCDI, 2013-2016

Current referent for the following institutions and journals:

CNCSIS (Romanian National Council for University Research)

Journal of non-Newtonian Fluid Mechanics (Elsevier)

Continuum Mechanics and Thermodynamics (Springer)

Microfluids and Nanofluids (Springer)

Applied Rheology (Kerschensteiner)

Canadian Journal of Physics

Experiments in Fluids (Springer)

SIAM

Lab-on-a-chip

Organised post-university courses:

1. Continuum mechanics, introduction in applied rheology
(for research engineers from industry, Bucharest 1994)
2. Rheology of viscoelastic fluids
(for post-graduated and Ph.D. students)
P.U. Bucharest (1997, 1998), T. U. Darmstadt (1998, 1999, 2000-2003);
T. U. Eindhoven (1999), Univ. Claude Bernard – Lyon 1 (2004), U.P. Bucharest – PolyCerNet (2007).
3. Rheology Summer School, Cluj-Napoca (2010)
4. Rheology Summer School, Bucharest-Iasi (2011)

Member of the following societies:

APSM, Professional Association of Students from Mechanics, Romania

SOFDAAD & ALUMNI FULBRIGHT ASSOCIATION, Romania

ROMAI - Romanian Society of Applied Mathematics

Culture Society "Bucovina", Romania

British Society of Rheology, U.K.

Society of Rheology, USA

Romanian Society of Rheology (vice-President)

International Committee of Rheology (representative member)

European Society of Rheology (representative member)

Family situation: married, 2 children

Publications

Corresponding author: marked yellow

Journals ISI

- Ris.32 Broboana D., Tanase N.O., **Balan C.** (2014) *Influence of patterned surface in the rheometry of simple and complex fluids*, J. Non-Newtonian Fluid Mech., <http://dx.doi.org/10.1016/j.jnnfm.2014.10.006>
- Ris.31 Ionescu E., **Balan C.**, Kleebe H-J., Mueller M., Guillon O., Schliephake D., Heilmair M., Riedel R. High-temperature creep behavior of SiOC glass-ceramics: Influence of network carbon versus segregated carbon, J. Am. Ceram. Soc., 1–8 (2014), DOI: 10.1111/jace.13206
- Ris.30 Zhong W., Wang S., Li J., Bechelany M., Ghisleni R., Rossignol F., **Balan C.**, Chartier T., Bernard S., Miele Ph. Design of carbon fiber reinforced boron nitride matrix composites by vacuum-assisted polyborazylene transfer molding and pyrolysis, J. Europ. Ceramics Soc. (ISSN 0955-2219) 33, 2979-2992, 2013
- Ris.29 Balan C.M., Broboana D., **Balan C.**, Investigation of vortex formation in micro-bifurcation, Microfluidics Nanofluidics (ISSN: 1613-4982) DOI 10.1007/s10404-012-1005-8, 2012
- Ris.28 Gedik E., Kurt H., Recebli Z., **Balan C.**, Two-Dimensional CFD Simulation of Magnetorheological Fluid Between Two Fixed Parallel Plates Applied External Magnetic Field, Computers & Fluids (ISSN 0045-7930) 63, 128–134, 2012
- Ris.27 Gottardo L., Bernard S., Gervais C., Inzenhofer K., Motz G., Weinmann M., **Balan C.**, Miele P., Chemistry, Structure and Processability of Boron-Modified Polysilazanes as Tailored Precursors of Ceramic Fibers, J. Mater. Chem. 22, 7739-7750, 2012.
- Ris.26 Kádár R., **Balan C.**, Transient dynamics of the wavy regime in Taylor–Couette geometry, Euro. J. Mech.B/Fluids (ISSN 0997-7546) 31, 158-167, 2012.
- Ris.25 Broboana D., Balan C.M., Wohland T., **Balan C.**, Investigations of the unsteady diffusion process in microchannels, Chem. Eng. Sci. (ISSN 0009-2509) 66, 1962-1972, 2011.

- Ris.24 Chavez R., Ionescu E., **Balan C.**, Fasel C., Riedel R., Effect of ambient atmosphere on crosslinking of polysilazanes, *J. Appl. Polymer Sci.* (ISSN: 1097-4628) **119**, 794–802, 2011.
- Ris.23 Calin A., Wilhelm M., **Balan C.**, Determination of the non-linear parameter (mobility factor) of the Giesekus constitutive model using LAOS procedure, *J. Non-Newtonian Fluid Mech.* **165**, 1564–1577, 2010
- Ris.22 Balan C.M., Broboana D., **Balan C.**, Mixing process of immiscible fluids in microchannels. *Int. J. Heat Fluid Flow* (ISSN: 0142-727X) **31**, 1125-1133, 2010
- Ris.21 Radulescu, A., Radulescu, I., Balan, C., Savu, T., Experimental researches concerning the lubricants durability, *J. Balkan Trib. Assoc.* **15**(2), 2009, 263-269.
- Ris20. **Balan C.**, Vekas L., Gheorghiu E., Broboana D., Rheological characterization of complex fluids in electro-magnetic fields, *J. Non-Newtonian Fluid Mech.* (ISSN 0377-0257), **154**, 22–30, 2008
- Ris19. Klein Ch., Spiess H., Calin A., **Balan C.**, Wilhelm M., Separation of the nonlinear oscillatory response into a superposition of linear, strain hardening, strain softening, and wall slip response, *Macromolecules* (ISSN 0024-9297), **40**, 4250-4259, 2007
- Ris18. Duperrier S., Gervais Ch., Bernard S., Cornu D., Babonneau F., **Balan C.**, Miele Ph., Design of a series of preceramic B-Tri(methylamino)borazine-based polymers as fiber precursors: architecture, thermal behaviour, and melt-spinning, *Macromolecules* (ISSN 0024-9297), **40**, 1018-1027, 2007
- Ris17. Duperrier S., Bernard S., Calin A., Sigla C., Chiriac R., Miele Ph., **Balan C.**, Design of a series of preceramic B-Tri(methylamino)borazine-based polymers as fiber precursors: shear rheology investigations, *Macromolecules* (ISSN 0024-9297), **40**, 1028-1034, 2007
- Ris16. Duperrier S., Calin A., Bernard S., **Balan C.**, Miele Ph., Rheological behaviour of Poly[(B-Alkylamino)Borazine] in a fiber spinning process, *Soft Materials* (ISSN 1539-445X), **4**, 123-142, 2007
- Ris15. **Balan C.**, Riedel R., Rheological investigations of polymeric precursor for ceramic materials: experiments and theoretical modeling, *JOAM* (ISSN 1454-4164), **8**, 561-567, 2006
- Ris14. Bernard S., Duperrier S., Cornu D., Miele P., Weinmann M., **Balan C.**, Aldinger F., Chemical tailoring of Single-Source molecular and polymeric precursors for the preparation of ceramic fibers, *JOAM* (ISSN 1454-4164), **8**, 648 – 653, 2006
- Ris13. **Balan, C.**, Balut, C., Gheorghe, L., Gheorghe, C., Gheorghiu, E., Ursu, G., Experimental determination of blood permittivity and conductivity in simple shear flow, *Clinical Hemorheology and Microcirculation* (ISSN 0271-5198), **30** (3-4), 359-364, 2004
- Ris12. Harsche, R., **Balan, C.**, Riedel, R., Amorphous Si(Al)OC ceramic from polysiloxanes: bulk ceramic processing, crystallization behavior and applications, *J. Euro. Ceramic Soc.* (ISSN 0955-2219), **24**, 3471 – 3482, 2004
- Ris11. Sadiki, A., **Balan, C.**, Rate-type model for electro-rheological material behaviour consistent with extended thermodynamics: application to a steady viscometric flow, *PAMM* (ISSN 1617-7061 on-line) **2**, 174-175, 2003
- Ris10. **Balan, C.**, Legat, V., Neagoe, A., Nistoran, D., Experimental investigations and numerical simulations for an open channel flow of a weak elastic polymer solution around a T-profile, *Experiments in Fluids* (ISSN 0723-4864) **36**, 408 – 418, 2004
- Ris9. **Balan, C.**, Riedel, R., Sol – gel modelling associated with the rheology of polymeric precursors of ceramic materials, *Appl. Rheol.* (ISSN 1430-6395) **13**, 251 – 258, 2003
- Ris8. **Balan, C.**, Tsakmakis, Ch., A finite deformation formulation of the 3-parameter viscoelastic fluid, *J. Non-Newtonian Fluid Mech.* (ISSN 0377-0257) **103**(1), 45-64, 2002
- Ris7. **Balan, C.**, Experimental and numerical investigations on the pure material instability of an Oldroyd's 3-constant model, *Continuum. Mech. Thermodyn.*(ISSN 0935-1175) **13**, 399–414, 2001
- Ris6. **Balan, C.**, Franco, J. M., Influence of the geometry on the transient and steady flow of lubricating greases, *Tribology Transaction* (ISSN 0569-8197) **44**(1), 53 – 58, 2001
- Ris5. **Balan, C.**, Voelger, K.W., Kroke, E., Riedel, R., Viscoelastic properties of novel silicon carbodiimide gels, *Macromolecules* (ISSN 0024-9297) **33**, 3404 – 3408, 2000
- Ris4. **Balan, C.**, Fosdick, R., Constitutive relation with coexisting strain rates, *Int. J. Non-Linear Mech.* (ISSN 0020-7462) **35**(6), 1023 – 1043, 2000
- Ris3. **Balan, C.**, Pure material instability and the concept of yield stress, *Appl. Rheol.* (ISSN 1430-6395) **9**(2), 58 – 63, 1999
- Ris2. Kuhn, E., **Balan, C.**, Experimental procedure for the evaluation of the friction energy of lubricating greases, *Wear* (ISSN 0043-1648) **209**, 237 – 240, 1997
- Ris1. **Balan, C.**, Hutter, K., A procedure to determine the material constants and the viscosity function for a yield shear stress, *Acta Mechanica* (ISSN 0001-5970) **109**, 65 – 79, 1995

Books/Chapters

- Balan, C.**, *Rheology of pre-ceramic polymers*, in *Polymer Derived Ceramics*, Eds. P. Colombo et al., DEStech Publ. Inc., Lancaster, 2009, pp. 89-106 (*37 Libraries outside Romania*)
- Balan, C.** (compiled author), *Rheology of Lubricating Greases*, ELGI Edit., Amsterdam, 2000 (*5 Libraries outside Romania*)
- Balan, C.**, Broboana, D., Kadar, R., Giurgea, C., Rafiroiu, D., Bernad, S., *Biomedical vortex flows*, Chapter 9. in *Vortex dominated flows*, edit. by Susan-Resiga R., Bernad S. and Muntean S., Edit. Eurostampa, Timisoara, 2007, pp. 429-492 (ISBN: 978-973-687-659-2)

In Romanian:

- Balan C.**, *Mecanica fluidelor pentru filosofi scrisa de un inginer*, Ed. Politehnica Press, Bucuresti, 2012 (ISBN 978-606-515-399-8)

2. Broboana D., Balan C.M., **Balan C.**, *Mecanica Fluidelor cu Fluent, vol. II – Aplicații in hemodinamica vaselor sanguine mari*, Ed. Politehnica Press, Bucuresti, 2011 (ISBN 978-606-515-261-80)
3. Broboana D., Muntean T., **Balan C.**, *Mecanica fluidelor cu FLUENT – vol.I*, Ed. Politehnica Press, Bucuresti, 2005 (ISBN 973-7838-06-8)
4. **Balan C.**, *Lecții de mecanica fluidelor*, Editura Tehnică, București, 2003 (ISBN 973-31-2078-2)
5. **Balan C.**, *Introducere în mecanica mediilor continue cu aplicații în reometrie*, Editura Sedona, Timișoara, 1998 (ISBN 973-9345-24-7)